

II. ANNELID JAWS FROM THE HAMILTON GROUP OF ONTARIO COUNTY, NEW YORK

By E. R. ELLER

In 1886, Dr. J. M. Clarke published, in the Sixth Annual Report of the State Geologist of New York, a short note on the annelid jaws which are to be described in the present paper. He did not attempt specific identification but assigned them to several genera. The writer is indebted to Dr. Rudolf Ruedemann, of the New York State Museum, for the opportunity of more fully describing these polychaeta annelid jaws, distinguished among other characters by their large size. These jaws came from near Canandaigua, New York.

DESCRIPTION OF SPECIES

Genus *EUNICITES*, Ehlers, 1868

Jaws of the genus *Eunicites* referred to maxilla II are comparatively elongate, rudely triangular with or without a shank extending from the anterior margin and the free edge bearing blunt or pointed denticles. Jaws of maxillae III and IV are smaller, crudely square or oblong, with a series of blunt or pointed denticles.

***Eunicites acuminatus* sp. n.**

MAXILLA II (Plate I, fig. 5)

1886. *Eunicites* sp. ? Clarke, J. M., Sixth Annual Report of the State Geologist of New York, p. 30, pl. IA, fig. 28.

Jaw long and triangular, tapering to a point; anterior end obliquely truncate and slightly incurved; inner margin provided with a series of conical pointed denticles which curve backwards and decrease in size toward the posterior end.

Eunicites acuminatus m. is similar to *Eunicites serrula* Hinde¹ except that the posterior end of Hinde's species is blunt or slightly truncate. The described specimen belongs to the New York State Museum ($\frac{5120}{1}$).

¹Bihang till k. Svensk. Akad. Handl., Vol. 7, N: 05. p. 11, pl. I, figs. 11, 12, 1882.

Genus ARABELLITES, Hinde, 1879

The genus was described by Hinde as follows:

"I propose to include in this genus jaws of widely different form, which have a general resemblance to those of the existing genus *Arabella*, Grube.

1. Jaws with an extremely prominent anterior hook, and a row of smaller teeth on a wide base;
2. Sickle-shaped jaws and allied forms;
3. Jaws subquadrate in form, with a straight upper edge of small teeth. Those of the first division appear to correspond with the first pair, the second resemble the second pair, as figured in Cuvier's "*Regne Animal*," of *Arabella (Oenone) maculata*, Edwards; whilst the square-shaped jaws I regard as belonging to the lower jaw of Annelids of this genus. Examples of these different forms are very abundant, not only in the Cambro-Silurian, but in all the other formations where the Annelid remains appear."

Arbellites longiformis sp. n.

MAXILLA I. (Plate I, fig. 6)

1886. *Oeononites* sp., Clarke, J. M., Sixth Annual Report of the State Geologist of New York, p. 30, pl. IA, fig. 29.

Jaw narrow, elongate, and the outer and inner lateral margins nearly parallel. Posterior end missing. Seven acute and slightly flattened denticles are widely spaced on the inner lateral margin. Anterior end terminates with a stout hook curved nearly at a right angle.

This form was brought under the genus *Oeononites* Hinde by Dr. Clarke. It has, however, the prominent anterior hook and a row of small denticles on a wide base, which is more characteristic for the genus *Arbellites* Hinde. The specimen is an extremely large one. The remaining part alone measured 8 mm. and if the jaw were complete, it would probably be at least 14 mm. in length. The figure in the present paper differs somewhat from Clarke's figure in outline and number of denticles, because some of the matrix was cleaned away by the writer.

The described specimen belongs to the New York State Museum ($\frac{5120}{1}$).

Arabellites clarkei sp. n.

MAXILLAE I, II, III, and IV (?). (Plate I, fig. 2)

1886. *Arabellites* sp., Clarke, J. M., Sixth Annual Report of the State Geologist of New York, p. 30, pl. IA, fig. 28.

It is difficult to give a true idea about the character of this articulated specimen because the jaw parts are incomplete, badly crushed, and distorted. However, the specimen is worth particular attention since it was the first one found in which the maxillae were in their natural position and thus has proved the correctness of the classification of these Paleozoic jaws as belonging to the Polychaeta.

The carriers and about half of the first paired maxillae are discernible at the posterior end. The carriers are narrow, angular, and show distinct ridges and furrows parallel to the lateral margin. The maxillae extend from the carrier with narrow arms at an angle of about 45° , then widen out and run parallel to each other. Such a structure has not been observed before, either on recent or fossil forms. The inner margins of the maxillae have rows of blunt denticles, the posterior being smaller than the anterior ones. The anterior portions of maxillae I are missing, or are so crushed by parts of following maxillae, that their true shape is uncertain. It is probable that they terminated in a hook which is characteristic for this genus.

A portion of the second paired maxillae bearing denticles extends from under the inner margins of the first paired maxillae. The denticles of the second maxillae are similar but smaller than those of the first maxillae. Between the paired jaws are observed some fragments of chitinous-like material which may be parts of the third or fourth maxillae, or fragments of the mandibles.

In front of the first paired maxillae present are fragments of plates and denticles. Dr. J. M. Clarke suggested apparently that these may be parts of the first maxillae. This seems to be true from examination of the specimen, but morphologically it gives the jaws an aberrant form. Quite possibly these are third or fourth maxillae, which have been crushed on the first maxillae.

In front of, and slightly to the left and right of the first paired maxillae, are two maxillae that I consider the third ones. They are badly broken but from the impressions and fragments it may be observed that they are oblong, square, and slightly rounded. Their denticles are small, compact, and without space between them.

The described specimen belongs to the New York State Museum ($\frac{5000}{1}$).

Arabellites marcellusensis sp. n.

MAXILLA I (Plate I, fig. 1)

1886. *Arabellites* sp., Clarke, J. M., Sixth Annual Report of the State Geologist of New York, p. 30, pl. IA, fig. 24.

Jaw broad, the outer margin nearly straight and ending in a strongly curved hook, the end of which does not extend beyond the opposite inner lateral margin; denticles blunt, eight in number. The first three extend straight out from the jaw, the remaining five curve backwards; posterior end broad with a sickle-shaped margin.

Arabellites marcellusensis m. is comparable in general to the Chemung *Arabellites bipennis* Eller.² The hook of *Arabellites bipennis* Eller, however, extends far beyond the inner margin, while in the jaw under consideration, the end of the hook does not extend to the margin. *Arabellites marcellusensis* m. is larger and broader than *Arabellites bipennis* Eller and the denticles of the former are along the full length of the margin and are not so conical and pointed, as in the latter. The described specimen belongs to the New York State Museum ($\frac{5000}{1}$).

Arabellites (?) robustus sp. n.

MAXILLA I (Plate I, fig. 4)

1886. *Arabellites* sp., Clarke, J. M., Sixth Annual Report of the State Geologist of New York, p. 30, pl. IA, fig. 27.

Jaw thick, massive, and with the width more than one-half the length. Seven blunt, flat, denticles are arranged along the inner margin; the first three of these are very large. Posterior margin obliquely truncate and notched slightly by two crescent shaped indentations. Posterior to the inner indentation, possibly not in its original position, is a spatula-shaped body, presumably a carrier.

This robust form is 3.5 mm. wide and 6 mm. long. It is interesting to speculate on the comparative size of an annelid that had such a large jaw. The specimen is different from any that I have seen and it is with some doubt that I place it in the Genus *Arabellites* Hinde.

The described specimen belongs to the New York State Museum ($\frac{5000}{1}$).

²Annals Carnegie Museum, Vol. XXII, p. 311, Pl. XXIII, figs. 8-10, 1934.

Genus NEREIDAVUS, Grinnell, 1877

Jaws elongate with blunt denticles, a distinct hook, and a truncated posterior end.

Nereidavus canandiaguaensis sp. n.

MAXILLA I (Plate I, fig. 3)

1886. *Arabellites* sp., Clarke, J. M., Sixth Annual Report of the State Geologist of New York, p. 30, pl. IA, fig. 25.

Jaw broad with a prominent terminal hook, posterior end obliquely truncate with a short rounded shank; inner margin bears a series of blunt denticles irregular in size and shape.

To some extent this jaw resembles that of the recent genus *Nereis* Linn. except that it is wider, more truncate at the posterior end, and has the additional shank.

The described specimen belongs to the New York State Museum ($\frac{5000}{3}$).

EXPLANATION OF PLATE I

- FIG. 1. *Arabellites marcellusensis* sp. n. x 10, Marcellus Shales; Flint Creek, Ontario County, New York.
- FIG. 2. *Arabellites clarkei* sp. n. x 6, Hamilton Group; Canandaigua, New York.
- FIG. 3. *Nereidavus canandaiguaensis* sp. n. x 10, Hamilton Group; Canandaigua, New York.
- FIG. 4. *Arabellites ? robustus* sp. n. x 8, Hamilton Group; Canandaigua, New York.
- FIG. 5. *Eunicites acuminatus* sp. n. x 8, Hamilton Group; Canandaigua, New York.
- FIG. 6. *Arabellites longiformis* sp. n. x 8, Hamilton Group; Canandaigua, New York.